

REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks.

Claims 1, 26-31, 41, 43-45, 51, 55, 57-59, and 67 are pending in the application, with claims 1, 41, and 55 being independent. Claims 1, 41, and 55 are amended herein. Support for the claim amendments and additions can be found in the original disclosure. No new matter has been added.

DRAWINGS

Formal Replacement Drawings have been filed concurrently with this Response to Final Office Action. The drawings have been amended *sua sponte* to correct informalities in Fig. 6. During the telephone interview, Applicant's attorney discussed changes to address informalities in Fig. 6. Applicant's attorney understood the Examiner to agree with the changes (type corrections) in Fig. 6. Accordingly, Applicant requests entry of the replacement drawings.

§ 103 REJECTIONS

Claims 1, 26-31, 41, 43-45, 51, 55, 57-59, and 67 stand rejected under 35 U.S.C. § 103(a) as being obvious over "Robust Real-Time Object Detection" (Viola et al.) in view of "A subspace Approach to Face Detection with Support Vector Machines" (Ai et al.). Applicant respectfully traverses the rejection. Nevertheless, without conceding the propriety of the rejection and in the interest of expediting allowance of the application,

claims 1, 41, and 55 have been amended as proposed during the interview and are believed to be allowable.

Claims 1, 26-31

Independent claim 1, as presently presented, recites in part:

processing a set of initial candidate portions of digital image data in a boosting filter stage to produce a set of intermediate candidate portions, the booster filter stage including:

a boosting chain having a plurality of boosting chain nodes to identify candidate portions and a boot strap function following each of the plurality of boosting chain nodes, the boot strap function to use false alarms collected from non-face image sets as a negative training set to initiate a subsequent boosting chain nod.

Applicant respectfully submits that Viola and Ai (hereinafter “cited references”), whether taken alone or in combination (assuming for the sake of argument that they can be combined), fail to teach or suggest each and every feature of claim 1.

In the Final Office Action, the Office states: “Perhaps Viola does not teach the exact boosting chain of the applicant’s invention; however, the applicant does not claim such a boosting chain.” (Final Office Action, page 2, paragraph 4, lines 1-3). Applicant has amended claim 1 to more specifically recite the intended subject matter, including the boosting chain. In particular, Applicant has amended claim 1 to recite features at least shown in Fig. 6 and at least described on page 25, line 16 to page 26, line 8. The Office relies on Fig. 12 of Viola as teaching a boosting chain. (Final Office Action, page 3, paragraph 8, lines 6-8). However, Viola fails to teach or suggest “a boot strap function” as presently recited in claim 1. Instead, Viola only shows a cascade of nodes in Fig. 12.

Accordingly, Applicant respectfully request reconsideration and withdrawal of the rejection to claim 1.

Dependent claims 26-31 depend from independent claim 1 and are allowable by virtue of this dependency, as well as for additional features that they recite. Applicant also respectfully requests individual consideration of each dependent claim.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 1 and 26-31.

Claims 41, 43-45, and 51

Independent claim 41, as presently presented, recites in part:

a boosting filter stage to process a set of initial candidate portions of digital image data to produce a set of intermediate candidate portions using a plurality of boosting chain nodes and a boot strap function following each of the plurality of boosting chain nodes, the boot strap function to:

- collect false alarms in non-face image sets from the boosting chain nodes,
- use the false alarms as a negative training set having adjusted weights, and
- using the negative training set to initiate a subsequent boosting chain node;

Applicant respectfully submits that the cited references, whether taken alone or in combination (assuming for the sake of argument that they can be combined), fail to teach or suggest each and every feature of claim 41. Similar to claim 1, Applicant has amended claim 41 to recite features at least shown in Fig. 6 and at least described on page 25, line 16 to page 26, line 8. The Office relies on page 2, paragraph 4 of Viola as teaching a

boosting filter stage. (Final Office Action, page 4, line 22 to page 5, line 2). However, Viola fails to teach or suggest “a boot strap function” as presently recited in claim 41. Instead, Viola only teaches a “cascade structure which dramatically increases the speed of the detector by focusing attention on promising regions of the image.” (Viola, page 2, paragraph 4, lines 2-3). Accordingly, Applicant respectfully request reconsideration and withdrawal of the rejection to claim 41.

Dependent claims 43-45, and 51 depend from independent claim 41 and are allowable by virtue of this dependency, as well as for additional features that they recite. Applicant also respectfully requests individual consideration of each dependent claim.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 41, 43-45, and 51.

Claims 55, 57-59, and 67

Independent claim 55, as presently presented, recites in part:

a boosting filter stage configured to process a set of initial candidate portions of digital image data using a boosting chain to produce a set of intermediate candidate portions, wherein the boosting chain includes a plurality of boosting chain nodes to identify candidate portions and a boot strap function following each of the plurality of boosting chain nodes, the boot strap function to use false alarms collected from non-face image sets as a negative training set to initiate a subsequent boosting chain node;

Applicant respectfully submits that the cited references, whether taken alone or in combination (assuming for the sake of argument that they can be combined), fail to teach or suggest each and every feature of claim 55. Similar to claim 1 and 41, Applicant has amended claim 55 to recite features at least shown in Fig. 6 and at least described on

page 25, line 16 to page 26, line 8. The Office relies on page 2, paragraph 4 of Viola as teaching a boosting filter stage. (Final Office Action, page 4, line 22 to page 5, line 2). However, Viola fails to teach or suggest “a boot strap function” as presently recited in claim 55. Instead, Viola only teaches a “cascade structure which dramatically increases the speed of the detector by focusing attention on promising regions of the image.” (Viola, page 2, paragraph 4, lines 2-3). Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claim 55.

Dependent claims 57-59, and 67 depend from independent claim 55 and are allowable by virtue of this dependency, as well as for additional features that they recite. Applicant also respectfully requests individual consideration of each dependent claim.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 55, 57-59, and 67.

Due to the Applicant’s earnest belief that the claims 1, 41, and 55 recite elements which are not taught or suggested in the cited references, Applicant will not specifically address motivation to combine the cited references with respect to the pending claims. Applicant hereby reserves the right to further challenge motivation to combine the cited references as applied to any of the pending claims.

CONCLUSION

For at least the foregoing reasons, claims 1, 26-31, 41, 43-45, 51, 55, 57-59, and 67 are in condition for allowance. Applicant respectfully requests reconsideration and withdrawal of the rejections and an early notice of allowance.

The arguments and amendments presented herein were necessitated by the most recent Office Action, and could not have been presented previously because the final Office Action rejected claims based on new art not previously of record.


If any issue remains unresolved that would prevent allowance of this case, Applicant requests that the Examiner contact the undersigned attorney to resolve the issue.

Respectfully Submitted,

Lee & Hayes, PLLC

Dated: 2008-10-07

By: _____


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Enclosure(s):

Replacement Drawings